

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**ORDER NO. 97-121
UPDATED WASTE DISCHARGE REQUIREMENTS AND RESCISSION OF ORDERS
NO. 88-080 AND 91-166**

**RHONE POULENC INC.
MARTINEZ FACILITY
MARTINEZ, CONTRA COSTA COUNTY**

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board), finds that:

1. Rhone Poulenc Inc. (hereinafter called the discharger) began operation in 1970 and manufactures various strengths and grades of sulfuric acid and oleum. The approximately 114-acre plant site (hereinafter called the Facility) is located in Martinez, adjacent to the Carquinez Strait and the south end of the Benecia Bridge, at the end of Mococo Road (Figure 1). Approximately 10 acres immediately adjacent to the Strait is owned by the State of California, and administered by the States Lands Commission.

BACKGROUND

2. From the turn of the century to 1958, the Mountain Copper Company (MOCOCO), the former property owner, operated a copper smelter at the site. Over the years, large piles of mineral processing and beneficiation wastes (primary copper smelting slag and "cinders" from the roasting of pyrite ores used for leaching metals) were accumulated onsite. The size and weight of the waste piles caused the piles to subside into the soft Bay Mud.

In 1968, Stauffer Chemical Company assumed ownership of the facility and began construction of the current acid plant. Stauffer removed and sold the accumulated cinder/slag piles to various industries as raw material. Removal of the waste piles was discontinued in 1976, when groundwater was encountered. Today, the remnants of the piles are present as underground "ore bodies" up to 40 feet below grade. Precipitation infiltration and/or groundwater that come into contact with the mining wastes generate a leachate rich in iron and zinc. This leachate is referred as "cinder water".

In 1972, Stauffer Chemical Company installed a cinder water extraction and storage system designed to prevent leachate from entering the nearby Carquinez Strait. Associated with the system was a series of sumps and two solar evaporation ponds. The system was successful for more than 20 years in lowering cinder water levels in the ore bodies and containing the cinder water onsite.

In 1985, the Board, under the Toxic Pits Cleanup Act (TPCA) of 1984, requested a complete hydrogeologic investigation for the entire site, and subsequently ordered that the two ponds be closed.

In 1988, Rhone-Poulenc, Inc. acquired Stauffer, thereby acquiring the property and the operations that comprises the facility.

In 1989, as part of the pond closure project, and to improve the cinder water management practices, the discharger elected to modify a treatment facility, known as the Process Effluent Purification (PEP) Plant. The PEP Plant was designed to treat the cinder water by removing the metal constituents through a sodium hydroxide precipitation process. The treatment involves a two-stage metals separation, whereby zinc and iron are precipitated separately at two different pH conditions. The iron filter cake is disposed offsite as a non-hazardous waste, and the zinc filter cake is further processed to become a fertilizer product. The closure of the surface impoundments was completed in 1996.

Hazardous Waste Regulatory Issues – The slag and cinder wastes that comprise the underground ore bodies are classified as mineral processing and beneficiation wastes. In 1994, the Department of Toxic Substances Control agreed that the underground ore bodies are exempt from regulations as hazardous waste management units. The Board has classified the ore bodies as Class B mining waste under Chapter 15, Title 23, Article 7 of the California Code of Regulations.

Effective July 18, 1997 many provisions of Division 3, Chapter 15 were moved into Title 27, Division 2, of the California Code of Regulations. The new regulatory citations are attached to this Order (Table 1) and thereby incorporated herein.

PURPOSE OF ORDER

3. The purpose of this order is to rescind previous orders and update the discharger's Self-Monitoring Program, evaluate the performance of the Facility's groundwater extraction and containment systems, and update ongoing operations for the Facility's waste management units.

SITE DESCRIPTION

4. The site contains six waste management units as described below:

- a. **North Cinder/Slag Area and South Cinder/Slag Area**

Mountain Copper Company (MOCOCO) disposed of large quantities of cinder and slag at the site, which has been classified as Class B Mining Waste. The cinders and slag were discharged over the north and south areas of the site, which have been designated as the North Cinder/Slag Area and the South Cinder/Slag Area. The approximately 8.3 acre North Cinder/Slag Area is located on land owned by the State Land Commission while the approximately 7.1 acre South Cinder/Slag area is located on the discharger's property.

North Cinder/Slag Area: The discharger removed the exposed cinder/slag and capped the remaining cinder/slag waste with a minimum of two feet of low permeability soil in 1978. The area is in the post-closure maintenance stage. The discharger has estimated that about 235,000 cubic yards of cinder/slag remain below the cap (ref. Report of Waste Discharge, January 1990). The North

Cinder/Slag Area consists of cinder and slag ranging in thickness from a trace to about 30 feet thick.

Leachate from the area had previously (1971) been observed discharging towards the Carquinez Strait. To eliminate the leachate discharge, the discharger installed a cutoff wall and leachate collection system between the Carquinez Strait and the waste cinder/slag area in 1972. The cutoff wall consists of compacted Bay Mud, measures approximately two-feet wide, and ranges in depth from 9 to 12 feet. A leachate collection and recovery system was installed and consists of a French drain located immediately upgradient from the cutoff wall and is connected to recovery sump S-24. Leachate from the south end of the North Cinder/Slag Area is collected in recovery sump S-28.

In 1988, the Process Effluent Purification (PEP plant) system was installed by the discharger to assist in the handling of cinder/slag leachate. In 1990, the PEP Plant started processing cinder/slag leachate. Pumps remove leachate from the two sumps and transport the leachate to the Facility's PEP plant for treatment. The discharger has reported that the cutoff wall and leachate recovery systems have been successful in eliminating the leachate discharge into the Carquinez Strait.

South Cinder/Slag Area: The discharger removed the exposed cinder/slag and capped the remaining cinder/slag waste with a minimum of two feet of low permeability soil in 1980. The area is in the post closure maintenance stage. The South Cinder/Slag Area consists of cinder and slag ranging in thickness from a trace to about 35 feet thick. The discharger has estimated that approximately 287,000 cubic yards of cinder/slag remain below the cap. There are no engineered containment structures located along the perimeter of the unit, however the unit has a leachate collection and removal system consisting of two leachate sumps S-25 and S-29. Pumps remove leachate from the sumps and transport the leachate to the Facility's PEP plant for treatment.

b. Pond 1 South Solar Evaporation Pond and Pond 2 North Solar Evaporation Pond:

Prior to the construction of the PEP plant two lined evaporation ponds designated as Pond 1 and Pond 2 were used to store low pH and metal contaminated groundwater/leachate which was pumped from the buried cinder/slag waste areas. Ore body leachate that was stored in the ponds was considered hazardous and therefore the ponds were regulated under the Toxic Pits Cleanup Act (TPCA).

The ponds no longer store hazardous waste and have been closed under the TPCA. Ore body leachate that was previously stored in the former TPCA ponds continues to be treated by the PEP plant.

Pond 1 Closure: Pond 1 sludges and liner were removed from the pond in accordance with a Board staff approved closure plan. The pond was lined with a new high density polyethylene liner, and the discharger was given approval by Board staff to use the pond for storm water run-off control.

Pond 2 Closure: Pond 2 was cleaned closed in accordance with a Board staff approved closure plan. The closure of the pond consisted of the following: pond sludges were stabilized and removed for offsite disposal, the liner was removed and disposed of offsite, impacts from the pond to subsurface soils and groundwater beneath the pond were investigated, the pond was backfilled with clean soil, and a compacted cover was installed above the former pond site.

- c. **Utility Spill Control Pond:** The 670,000-gallon pond is an active Class II lined pond that is used for the storage of designated waste. The pond, which is located adjacent to the Facility on State Lands Commission property, is lined with a 40-mil Hypalon liner (chlorosulfonated polyethylene) overlying a 30-mil Hypalon liner.

The pond was installed in 1971 and is used to contain spills from the Facility's process area and also receives wastewater from the plant flare scrubber, and excess NPDES system water. The pond discharges to the Surge Pond for treatment. The discharger reported in the 1990 Report of Waste Discharge that the pond has had little or no impact on State waters.

- d. **Surge Pond:** The Surge Pond is an active 500,000-gallon Class II lined pond which stores designated waste. The pond is lined with two 40-mil Hypalon liners which overlies a 30-mil Hypalon liner.

Water from the acid plant enters a 23,000-gallon fiberglass tank (T-28) where caustic and aluminum sulfate are added to raise the pH. Tank T-28, regulated as a Permit-by Rule unit, is surrounded by the Surge Pond which receives T-28 overflow water. Effluent from the surge pond discharges to the 13,000 gallon Tank T-21. Tank T-21 also receives liquid waste streams directly from the PEP plant.

- e. **Settling Pond:** The Settling Pond is a 630,000-gallon active Class II lined wastewater effluent polishing pond. The pond is lined with two 40-mil Hypalon liners which overlies a 30-mil Hypalon liner. The pond receives combined wastewater that has passed through Tank T-21. The Settling Pond is divided into three sections of varying depth. Pond sediments are removed about twice a year and sent to a landfill for disposal. Pond liquid is discharged under a Board NPDES Permit No. CA 0006165, Order No. 93-063, and amended by Order No 96-033 in March 1996.

PREVIOUS WASTE DISCHARGE REQUIREMENTS ORDERS

5. The Board adopted Waste Discharge Requirements Order No. 88-080 on May 18, 1988. The Board adopted Cease and Desist Order No. 88-174 on December 21, 1988 for violations to Order No. 88-080 and the Toxic Pits Cleanup Act. Order No. 88-174 required the discharger to cease placing or storing hazardous waste in Pond 1 and Pond 2. The Board adopted Order No. 91-166, which amended the compliance schedule of Order 88-174.

The Board adopted Waste Discharge Requirements under the National Pollution Discharge Elimination System (NPDES) Permit No. CA 0006165, Order No. 93-060 in June 1993. The permit was amended by Order No. 96-033 in March 1996.

GEOLOGY

6. The Facility is located in California's east-central Coast Range geomorphic province. The majority of the higher portions of the Facility resides on an artificially graded hill composed of Cretaceous and Paleocene shale and sandstone. Topographic lows at the Facility are composed of flat-lying Quaternary Bay Muds, sands and peats of the Sacramento/San Joaquin fluvial-deltaic depositional system. The developed areas of the topographically low-lying ground was variously filled or otherwise covered with mining wastes composed of cinders and slag, that has been classified as Class B mining waste. Cinders and slag had previously been piled at the site where this material sank into the Bay-Mud sequence and remains buried.

The discharger's offices and other facilities are located on a low-lying northwest trending outcrop of bedrock, which forms a low hill behind the office. The facility is located on an adjoining northeast trending outcrop of bedrock, known as Bull's Head Point, which drops steeply, approximately 60 feet vertically on three sides. The eastern and northeastern portions of the site are historical wetlands bordered on the east by Peyton Slough and on the north by the Carquinez Straits.

Two distinct bedrock units exist throughout the site. The oldest formation is the Cretaceous age (136 to 65 million years) Panoche Formation, which consists of claystones, siltstones and minor sandstones. The second bedrock unit is the Paleocene age (65 to 54 million years) Martinez Formation, which consists of claystone, siltstone, and minor sandstones.

Unconsolidated Quaternary aged (less than one million years) sediments consisting of Bay Mud that include peats and occasional occurrences of sand lenses are found at the site. The Bay Mud is a predominantly soft, dark colored, clay rich sediment that has low hydraulic conductivity. The peats are predominantly located in the southern half of the site. The peats are dark colored, soft, low plasticity, and have hydraulic conductivities similar to the Bay Muds. Sand lenses deposited by Peyton Slough and the Sacramento/San Joaquin River through the Carquinez Straits are found in the northern half of the site. The sand deposits are fine to medium grain; olive-gray colored, and are bedded between one-inch to three feet.

SITE SEISMICITY

7. The Facility is located within the region of three main seismically active zones, expressed on the surface as the Franklin, South Hampton, and Green Valley-Concord faults. The active San Andreas Fault is located approximately 33 miles west of the site. The discharger has estimated that the maximum peak bedrock acceleration of 0.59g will occur from a Richter magnitude 7.0 maximum credible earthquake along the Green Valley Fault located about two-miles from the site.

The Alquist-Priolo Act fault-rupture hazard zone map published by the Division of Mines

and Geology in 1977 shows no faulting within one mile of the site. However, according to the discharger's 1990 Report of Waste Discharge for the site, three small inactive (pre-Quaternary) thrust faults are located at the site. None of the inactive faults pass within 200 feet of a waste management unit.

SURFACE WATER AND GROUNDWATER

8. Surface Water:

Surface water at the site is monitored at three surface water stations that are located along the west bank of Peyton Slough. The discharger monitors the stations quarterly for metals, water level, temperature, pH, and specific conductance.

9. Peyton Slough: The statewide Bay Protection and Toxic Cleanup Program has collected, analyzed, and evaluated the toxicity of sediments found in Peyton Slough adjacent to the Facility. Analytical results indicate that the slough sediments adjacent to the site have been impacted by high levels of metals which include: cadmium at 27.9 mg/kg, copper at 7800 mg/kg, zinc at 6000 mg/kg and lead at 214 mg/kg. Toxicity to aquatic organisms was found to be associated with the high levels of metals found in the slough sediments.

10. Groundwater:

The Facility is located in the small Shell Marsh/Peyton slough Groundwater Basin, immediately to the west and adjacent to the mouth, or lowermost end, of the Ygnacio Valley Groundwater Basin. To the west of the Shell Marsh/Peyton slough Groundwater Basin is the Alhambra Valley Groundwater Basin. Groundwater within these basins is primarily stored in recent and older alluvium. Groundwater also occurs, through under different conditions, in the consolidated Cretaceous and Tertiary rocks that surround and underlies the groundwater basins.

The majority of the Facility is located just above sea level, with the shallow groundwater found zero to twelve feet below the low-lying areas. Groundwater flow within the Facility is predominantly controlled by topography, flowing from topographic highs to topographic low areas. According to the City of Martinez Water Utilities Department there are no drinking water wells located within a one-mile radius of the site.

The site contains three hydrostratigraphic units that include the following:

- **The water table unit:** The unit comprises the shallowest saturated zone beneath the site. The unit is most pronounced in the southern portion of the site. The unit is comprised of fill, Bay Muds and peats. Groundwater flow is southeasterly toward the adjacent wetlands beneath the southern portion of the site and north toward the Carquinez Strait beneath the northern portion of the site.
- **The bedrock unit:** Groundwater within the unit flows to the southeast beneath the southern half of the site and north towards the Carquinez Strait for the northern half of the site. The unit is encountered in consolidated and/or cemented material that underlies unconsolidated sediments and outcrops at the site. Portions of the unit are confined while other portions are unconfined.

- **The lower intermediate/peat unit:** The unit is irregularly distributed in the alluvium beneath the low-lying portions of the site. This unit is particularly prevalent beneath and adjacent to the former evaporation ponds. The unit comprises lenses of peat and peaty sands or mud deep within the alluvium of the site.

11. Groundwater Degradation:

Groundwater at the site has been impacted by the historic Class B mining wastes. The Water Table hydrostratigraphic unit is the unit, which has been the most impacted. The Discharger's December 1996, Quarterly Groundwater Monitoring Report, Third Quarter 1996, indicates that the following constituents have exceeded the proposed Drinking Water Standards (DWS) for the site:

Iron:	as high as 38,000 mg/l	(secondary DWS of 0.30 mg/l)
Nickel	as high as 1.9 mg/l	(DWS of 0.10 mg/l)
Zinc:	as high as 14,000 mg/l	(secondary DWS of 5.0 mg/l)
Cadmium:	as high as 0.85 mg/l	DWS of 0.005 mg/l)
Arsenic:	as high as 0.89 mg/l	(DWS of 0.05 mg/l)
Barium:	as high as 18 mg/l	(DWS of 2.0 mg/l)

12. Groundwater monitoring program:

Groundwater monitoring of all three hydrostratigraphic units (Figures 2a, 2b, and 2c) is conducted on a semiannual basis at the Facility. During the first semiannual event the discharger monitors the water quality of 40 groundwater wells. During the second semiannual event the discharger monitors the water quality of 42 groundwater wells. Groundwater wells for the first semiannual groundwater monitoring event are monitored for the following metals: iron, nickel, zinc, and cadmium. Groundwater wells for the second semiannual groundwater monitoring event are monitored for the following metals: iron, nickel, zinc, cadmium, copper, lead, arsenic, and barium. Well EW-1 is monitored for mercury during both semiannual events.

BASIN PLAN

13. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20 and November 13, respectively, of 1995. A summary of regulatory provisions is contained in Title 23 of the California Code of Regulations at Section 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

BENEFICIAL USES

14. The existing beneficial uses as stated in the Basin Plan for the Carquinez Strait and Peyton Slough are:
- Industrial service water supply
 - Water contact recreation
 - Non-water contact recreation
 - Fish migration and spawning
 - Commercial and sport fishing

- Wildlife habitat
- Cold salt water habitat
- Navigation
- Estuarine habitat
- Preservation of rare and endangered species

The potential beneficial uses of groundwater discharged and mixed with surface waters beyond the northern, eastern, and northwestern perimeters of the Facility include:

- Wildlife and estuarine habitat

CALIFORNIA ENVIRONMENTAL QUALITY ACT

15. This action is exempt from the provisions of the California Environmental Quality Act pursuant to Section 15301, Title 14 of the California Code of Regulations.
16. All the waste management units listed in this Order are subject to this Order.
17. The Board notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for discharges from the site and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
18. The Board in a public hearing heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Rhone Poulenc, their agents, successors and assigns shall meet the applicable provisions contained in Title 23, Division 3, Chapter 15, of the California Code of Regulations and Division 7 of the California Water Code, and shall comply with the following:

A. PROHIBITIONS

1. Migration of pollutants through subsurface transport to waters of the State is prohibited.
2. There shall be no discharge of wastes to surface waters except as permitted under the National Pollutant Discharge Elimination System.
3. The treatment, discharge or storage of materials which may impact the beneficial uses of ground or surface water shall not be allowed to create a condition of pollution or nuisance as defined in Sections 13050 (l) and (m), respectively, of the California Water Code.
4. There shall be no discharges to a surface impoundment, and any residual liquids and sludges shall be removed expeditiously, if it is determined the surface impoundment is leaking or there is a surface impoundment containment system failure which causes a threat to water quality.

5. The Discharger shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:
 - a. Surface Waters
 1. Floating, suspended, or deposited macroscopic particulate matter or foam.
 2. Bottom deposits or aquatic growth.
 3. Alteration of temperature, turbidity, or apparent color beyond natural background levels.
 4. Visible, floating, suspended or deposited oil or other products of petroleum origin.
 5. Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.
 - b. Groundwater
 1. The groundwater shall not be degraded as a result of the waste disposal operations.

B. SPECIFICATIONS

Surface Impoundment Specifications:

1. The surface impoundments shall prevent migration of wastes to adjacent geologic materials, groundwater, or surface water, throughout the operation, closure, and post-closure periods.
2. All surface impoundments shall have foundations capable of supporting the containment structures and capable of withstanding hydraulic pressure gradients to prevent failure due to settlement, compression, or uplift.
3. The materials used for containment structures shall have appropriate chemical and physical properties to ensure containment of wastes at all times. Liner permeabilities shall be determined relative to the liquids contained in the respective ponds and shall be determined by appropriate tests methods in accordance with accepted civil engineering practice.
4. The surface impoundments shall be designed, constructed and operated to withstand ground accelerations associated with the maximum credible

earthquake without damage to the foundation, the containment structures, and other structures which control leachate, surface drainage, or erosion.

5. The surface impoundments shall be protected from any washout or erosion of wastes from inundation, which could occur as a result of a 100-year, 24 hour precipitation event, or as the result of flooding with a return frequency of 100 years.
6. The containment structures of the surface impoundments shall be maintained to preclude failure as a result of potential rapid geologic changes.
7. The surface impoundments shall be operated such that scouring at points of discharge and by wave action at the water line will not degrade the pond lining.
8. The pipeline discharge to surface impoundments shall be either equipped with devices, or fail-safe operating procedures, to prevent overfilling.
9. The Discharger shall operate the surface impoundments according to a detailed operating and contingency plan, which will include at a minimum, procedures for routine inspection of the surface impoundments, discharge into a pond, discharge out of a pond, contingency measures if leachate is detected or problems with the containment structures are found, and notification of agencies.
10. Surface impoundments shall have sufficient freeboard to accommodate seasonal precipitation and precipitation conditions specified for each class waste management unit, but in no case less than **two-feet (vertical)** of freeboard, and shall be designed and constructed to prevent overtopping as a results of wind conditions likely to accompany such precipitation conditions.
11. During the active life of the surface impoundment, the wastes shall periodically be removed and the bottom of the impoundment cleaned down to the top liner. An inspection shall be made of the bottom liner system to assure there is no damage to the liner system prior to refilling the impoundment.

General Specifications

12. All reports pursuant to this Order shall be prepared under the supervision of a registered civil engineer, California registered geologist, or certified engineering geologist.
13. The Discharger shall install, maintain in good working order, and operate efficiently any facility, alarm, or control system necessary to assure compliance with these Waste Discharge Requirements.
14. The Discharger shall implement any Self Monitoring and Reporting Program issued by the Executive Officer. The purpose of the Self Monitoring and

Reporting Program is to detect, at the earliest opportunity, any unauthorized discharge of waste constituents from the surface impoundments, or any unreasonable impairment of beneficial uses associated with the Facility's past and present activities.

15. The discharger shall install any reasonable additional groundwater and cinder water monitoring/collection devices required to fulfill the terms of any Self Monitoring Reporting Program issued by the Executive Officer.
16. This Board considers the property owner and site operator to have continuing responsibility for correcting any problems that arise in the future as a result of waste discharge or related operations during the operational and postclosure maintenance periods.
17. The Board shall be notified immediately of any waste containment system failures occurring at the site. Any failure, which potentially compromises the integrity of containment structures, shall be promptly corrected after approval of the method and schedule by the Executive Officer.
18. The discharger shall notify the Board **at least 180 days** prior to beginning any intermediate or final closure activities. This notice shall include a statement that all closure activities will conform to the most recently approved closure plan and that the plan provides for site closure in compliance with all applicable regulations.
19. Cinder water collection and removal systems shall be designed and operated to function without clogging through the scheduled maintenance/closure of the waste management unit and during the post-closure maintenance period. The systems shall be tested **at least annually** to demonstrate proper operation. The results of the test shall be compared with earlier test made under comparable conditions.
20. Closure of all waste management units shall be in compliance with the requirements of Article 8, Title 23, Chapter 15.
21. If the Board determines that any of the surface impoundments or waste containment facility is polluting or threatening to pollute State waters, the Board may require the discharger to immediately cease the discharge.
22. All monitoring wells shall be constructed in a manner that maintains the integrity of the drill hole, prevents cross-contamination of saturated zones, and produces representative groundwater samples from discrete zones within the aquifer unit each well is intended to monitor.
23. All borings for monitoring wells shall be continuously cored, and the cores shall be archived. The drill holes shall be logged during drilling under the direct supervision of a registered geologist whose signature appears on the

corresponding well log. Logs of monitoring wells shall be filed with the Department of Water Resources. All information used to construct the wells shall be submitted to the Board upon completion of the wells.

24. All soil and groundwater samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/control records for the Board staff to review.
25. If it is determined by the Executive Officer, based on groundwater monitoring information, that water quality impairment outside of any surface impoundment or waste disposal area is not improving, or continues to degrade, the discharger may be required to submit additional site specific groundwater corrective action proposals.
26. At any time, the Discharger may file a written request (including appropriate supporting documents) with the Regional Board Executive Officer, proposing appropriate modifications to the Self Monitoring and Reporting Program.
27. The Discharger shall comply with all applicable requirements of the California Code of Regulations Title 23, Division 3, Chapter 15, which includes the requirements of Article 5.

C. PROVISIONS

1. The discharger shall comply with all Prohibitions, Specifications, and Provisions of this Order, immediately upon adoption of this Order or as provided below.
2. The discharger shall submit a **Contingency Plan** acceptable to the Executive Officer to be instituted in the event of a leak or spill from the surface impoundments or any leachate containment facilities. The discharger shall give immediate notification to the San Francisco Bay Regional Water Quality Control Board, and the California Department of Toxic Substance Control. The discharger shall initiate its corrective action plan to stop and contain the migration of pollutants from the site.
REPORT DUE DATE: November 20, 1997.
3. The Discharger shall obtain and maintain a **Financial Assurance Instrument** acceptable to the Executive Officer until the end of the Post-Closure Maintenance Period for any classified waste management unit subject to the California Code of Regulations Title 23, Division 3, Chapter 15, Article 5 requirements. The Discharger shall submit a report every five years that either validates the Instrument's ongoing viability or proposes and substantiates any needed changes (e.g., a documented increase in the monitoring systems' ability to provide reliable early detection of a release can cause a decrease in the Instrument's financial coverage). For the purposes of planning the amount of the fund, the discharger shall assume a post-closure period of at least 30 years.

However, the post-closure maintenance period shall extend as long as the wastes pose a threat to water quality.

REPORT DUE DATE: June 30, 1998, and every five years thereafter.

4. The discharger shall submit a detailed **Post Earthquake Inspection and Corrective Action Plan** acceptable to the Executive Officer to be implemented in the event of any earthquake generating ground shaking of Richter Magnitude 6.5 or greater at or within 30 miles of the Facility. The report shall describe the containment features, and ground water monitoring and leachate control facilities potentially impacted by the static and seismic deformations of the surface impoundments and waste containment systems. The plan shall provide for reporting results of the post earthquake inspection to the Board within 72 hours of the occurrence of the earthquake. Immediately after an earthquake event causing damage to any waste containment structures (surface impoundment, piping, extraction system, etc.) the corrective action plan shall be implemented and this Board shall be notified of any damage.

REPORT DUE DATE: February 21, 1998

5. The discharger shall submit a detailed workplan and schedule acceptable to the Executive Officer for the investigation of metal contamination found in the **Peyton Slough** sediments adjacent to the Facility. The workplan shall include but not be limited to the following:

- A map identifying Peyton Slough sediment sample locations. A sufficient number of cores shall be collected in order to characterize the horizontal and vertical extent of the contamination.
- Four samples shall be taken from each sample location. The sediment samples shall be taken from the following depths: at the surface, six inches, one-foot, two feet and three-feet.
- The sediment samples shall be analyzed for the following metals: cadmium, copper, zinc, and lead.
- Methods to identify sources of the metals found in the slough, which shall include both historic and current discharges which contribute or have contributed to metal contamination of the slough sediments.

WORKPLAN DUE: March 6, 1998

6. **Surface Impoundments:**

The Discharger shall submit an Operations and Maintenance Plan acceptable to the Executive Officer which shall include the following information for each surface impoundment:

- a. Description of inflows and outflows to each pond (include flow diagrams)
- b. Treatment chemicals added to any pond influent or pond waters.
- c. Pond containment system maintenance tasks and schedule.
- d. Methods for: pond sludge sampling, classification of sludge waste, removal of sludge wastes (including schedule) and disposal of sludge wastes.

PLAN DUE: April 19, 1998

7. The Discharger shall submit to this Board a **Groundwater Extraction/Treatment System Report** acceptable to the Executive Officer. This report is required for any perimeter, interior, or future groundwater extraction system or treatment system. The report shall include the following components:
 - a. As-Built construction design of each groundwater extraction/treatment system.
 - b. An extraction/treatment system operation plan, maintenance plan, and maintenance schedule; for each extraction/treatment system.
 - c. System Performance: The Discharger shall periodically demonstrate that all groundwater containment and extraction/treatment systems are containing and extracting polluted groundwater. The system performance evaluation shall include but not necessarily be limited to: recording extraction sump level monthly, recording the amounts of cinder water removed from the subsurface, and recording the pounds of contaminants removed from the subsurface through extraction.

REPORT DUE: January 30, 1998

PERIODIC SYSTEM PERFORMANCE REPORT DUE: May 30, 1998, thereafter, every year.

8. The discharger shall submit, within 90 days after the closure of any waste unit, a closure certification report acceptable to the Executive Officer which documents that the area has been closed according to the requirements of this Order and Chapter 15. The discharger shall certify under penalty of perjury that all closure activities were performed in accordance with the most recently approved closure plan and in accordance with all applicable regulations.
9. The discharger shall file with this Board a report acceptable to the Executive Officer of any material change or proposed change in the character, location, or quantity of the waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries of the disposal areas or the ownership of the site.
10. The discharger shall immediately notify the Board of any event which in any way might compromise the integrity of the waste, leachate, or containment facilities or precipitation and drainage control structures.
11. The discharger shall maintain all devices or designated features installed in accordance with this Order such that they continue to operate as intended without interruption except as a result of failures that could not have been reasonably foreseen or prevented by the discharger.
12. The discharger shall maintain a copy of this Order at the site so as to be available at all times to site operating personnel.

13. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations.
14. This Order is subject to Board review and updating, as necessary, to comply with changing state or federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics.
15. Regional Board Waste Discharge Requirement Order No. 88-080 and Cease and Desist Order No. 91-166 are hereby rescinded.
16. The Discharger shall notify this Board of any previously unknown soil or groundwater contamination discovered during any subsurface investigations conducted at the Facility, which may potentially have an adverse impact on ground or surface waters.
17. The Discharger shall implement any Monitoring and Reporting Program issued by the Executive Officer.
18. The Board considers the property owner and site operator to have a continuing responsibility for correcting any problems within their reasonable control which arise in the future as a result of this waste discharge or water applied to this property during subsequent use of the land for other purposes.
19. Technical reports/plans submitted by the Discharger in compliance with the Prohibitions, Specifications, and Provisions of this Order shall be submitted to the Board on the schedule specified herein. These reports/plans shall consist of a letter report that includes the following:
 - a. Identification of any obstacles which may threaten compliance with the schedule;
 - b. In the event of non-compliance with any Prohibition, Specification or Provision of this Order, written notification which clarifies the reasons for non-compliance and which proposes specific measures and a schedule to achieve compliance. This written notification shall identify work not completed that was projected for completion, and shall identify the impact of non-compliance on achieving compliance with the remaining requirements of this Order; and,
 - c. In the self-monitoring reports, an evaluation of the current groundwater monitoring system and a proposal for modifications as appropriate.

20. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order, submitted by the Discharger, shall also be provided to the following agencies:
- a. California Environmental Protection Agency, Department of Toxic Substances Control.
21. If any hazardous substance is discharged in or on any waters of the state, or discharged and deposited, or probably will be discharged in or on any waters of the state, the Discharger shall:
- a. Report such discharge to the following:
 - (1) This Regional Board at (510) 286-1255 on weekdays during office hours from 8 a.m. to 5 p.m.; and,
 - (2) The Office of Emergency Services at (800) 852-7550.
 - b. A written report shall be filed with the Regional Board within five working days and shall contain information relative to the following:
 - (1) The nature of waste or pollutant;
 - (2) The quantity involved and the duration of incident;
 - (3) The cause of spill;
 - (4) The estimated size of affected area;
 - (5) The corrective measures that have been taken or planned, and a schedule of these measures; and,
 - (6) The persons/agencies notified.
22. The Board will review this Order periodically and may revise the requirements when necessary.
23. CHANGE IN OWNERSHIP
In the event of any change in control or ownership of the Facility presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation of this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of this Order within 30 days of the change of ownership. The request must contain the requesting entity's full legal name, the address and telephone number of the persons responsible for contact with the Board. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.
24. DUTY TO COMPLY
The discharger must comply with all conditions of these waste discharge requirements. Violations may result in enforcement actions, including Regional

Board orders or court orders requiring corrective action or imposing civil monetary liability or in modification or revocation of these waste discharge requirements by the Regional Board. [CWC Section 13261, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350].

25. GENERAL PROHIBITION

Neither the treatment nor the discharge of waste shall create a pollution, contamination or nuisance, as defined by Section 13050 of the California Water Code (CWC). [H & SC Section 5411, CWC Section 13263]

26. AVAILABILITY

A copy of these waste discharge requirements shall be maintained at the discharge facility and be available at all times to operating personnel. [CWC Section 13263]

27. CHANGE IN DISCHARGE

In the event of a material change in the character, location, or volume of a discharge, the discharger shall file with this Regional Board a new Report of Waste Discharge. [CWC Section 13260(c)]. A material change includes, but is not limited to, the following:

- (a) Addition of a major industrial waste discharge to discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the waste.
- (b) Significant change in disposal method, e.g., change from a land disposal to a direct discharge to water, or change in the method of treatment which would significantly alter the characteristics of the waste.
- (c) Significant change in the disposal area, e.g., moving the discharge to another drainage area, to a different water body, or to a disposal area significantly removed from the original area potentially causing different water quality or nuisance problems.
- (d) Increase in flow beyond that specified in the waste discharge requirements.
- (e) Increase in area or depth to be used for solid waste disposal beyond that specified in the waste discharge requirements [CCR Title 23 Section 2210]

28. REVISION

These waste discharge requirements are subject to review and revision by the Regional Board. [CCR Section 13263]

29. TERMINATION

Where the discharger becomes aware that it failed to submit any relevant facts

in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Regional Board, it shall promptly submit such facts or information. [CWC Sections 13260 and 13267]

30. VESTED RIGHTS

This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the discharger from his liability under Federal, State or local laws, nor do they create a vested right for the discharger to continue the waste discharge. [CWC Section 13263(g)]

31. SEVERABILITY

Provisions of these waste discharge requirements are severable. If any provisions of these requirements are found invalid, the remainder of these requirements shall not be affected. [CWC 9213]

32. OPERATION AND MAINTENANCE

The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this order. [CWC Section 13263(f)]

33. RELEASES

Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the office of Emergency Services of the discharge in accordance with the spill reporting provision of the state toxic disaster contingency plan adopted pursuant to Article 3.7 (commencing with Section 8574.7) of Chapter 7 of Division 1 of Title 2 of the Government Code, and immediately notify the State Board or the appropriate Regional Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of Section 13271 of the Water Code unless the discharger is in violation of a prohibition in the applicable water Quality Control Plan. [CWC Section 13271(a)]

34. PETROLEUM RELEASES

Except for a discharge which is in compliance with these waste discharge requirements, any person who without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) such person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State oil spill contingency plan adopted pursuant to Article 3.5 (commencing with Section 8574.1) of Chapter 7 of Division 1 of Title 2 of the Government Code. This provision does not require reporting of any discharge of less than 42 gallons unless the discharge is also required to be reported pursuant to Section 311 of the Clean Water Act or the discharge is in violation of a prohibition in the applicable Water Quality Control Plan. (CWC Section 13272]

35. ENTRY AND INSPECTION

The discharger shall allow the Regional Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

- (a) Enter upon the discharger's premises, in accordance with the discharger's health and safety procedures, where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this order;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this order;
- (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
- (d) Sample or monitor at reasonable times, for the purposes of assuring compliance with this order or as otherwise authorized by the California Water Code, any substances or parameters at any location. [CWC Section 13267]

36. MONITORING DEVICES

All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurements devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices. Annually, the discharger shall submit to the Executive Officer a written statement signed by a registered professional engineer certifying that all flow measurement devices have been calibrated and

will reliably achieve the accuracy required.

Unless otherwise permitted by the Regional Board Executive officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. The Regional Board Executive Officer may allow use of an uncertified laboratory under exceptional circumstances, such as when the closest laboratory to the monitoring location is outside the State boundaries and therefore not subject to certification. All analyses shall be required to be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40 CFR Part 136] promulgated by the U.S. Environmental Protection Agency. [CCR Title 23, Section 2230]

37. TREATMENT

In an enforcement action, it shall not be a defense for the discharger that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the discharger shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost. (CWC Section 13263(f))

38. DISCHARGES TO NAVIGABLE WATERS

Any person discharging or proposing to discharge to navigable waters from a point source (except for discharge of dredged or fill material subject to Section 404 of the Clean Water Act and discharge subject to a general NPDES permit must file an NPDES permit application with the Regional Board. (CCR Title 2 Section 22357)

39. ENDANGERMENT OF HEALTH AND ENVIRONMENT

The discharger shall report any noncompliance, which may endanger health or the environment. Any such information shall be provided orally to the Executive officer within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by case basis if the oral report has been received within 24 hours. The following occurrences must be reported to the Executive Officer within 24 hours;

- (a) Any bypass from any portion of the treatment facility.

- (b) Any discharge of treated or untreated wastewater resulting from sewer line breaks, obstruction, surcharge or any other circumstances.
- (c) Any treatment plant upset which causes the effluent limitation of this Order to be exceeded. [CWC Sections 13263 and 13267]

40. MAINTENANCE OF RECORDS

The discharger shall retain records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this order. Records shall be maintained for a minimum of three years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive officer.

Records of monitoring information shall include:

- (a) The date, exact place, and time of sampling or measurements;
- (b) The individuals who performed the sampling or measurements;
- (c) The date(s) analyses were performed.
- (d) The individuals who performed the analyses;
- (e) The analytical techniques or method used; and
- (f) The results of such analyses.

41. All application reports or information to be submitted to the Executive Officer shall be signed and certified as follows:

- (1) For a corporation -- by a principal executive officer or the level of vice president.
- (2) For a partnership or sole proprietorship -- by a general partner or the proprietor, respectively.
- (3) For a municipality, state, federal, or other public agency -- by either a principal executive officer or ranking elected official.

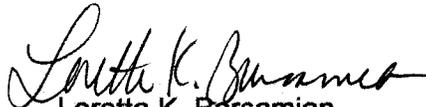
A duly authorized representative of a person designated in paragraph (a) of this provision may sign documents if:

- (1) The authorization is made in writing by a person described in paragraph (a) of this provision.
- (2) The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity; and
- (3) The written authorization is submitted to the executive officer.

Any person signing a document under this Section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. [CWC Sections 13263, 13267, and 13268]

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on October 15, 1997.


Loretta K. Barsamian
Executive Officer

Attachments:

Figure 1: Site Location Map

Figure 2a, 2b, and 2c: Site Well location Maps

Table 1: SWRCB Regulation Cross-Reference

Attachment 3: Self Monitoring and Reporting Program



SITE LOCATION MAP

**Stauffer Chemical Company
Martinez, California**

Figure 1

LEGEND

- 2-INCH WELL LOCATION
- 4-INCH WELL LOCATION
- 31 WELL NAME/NUMBERS

0 FOOT CINDER ISOPLETH
 (0 Foot thickness contour
 from RSD Drawing 4-17).

M CONTRA COSTA COUNTY
 MOSQUITO ABATEMENT DISTRICT
 DAM AND PUMPING STATION

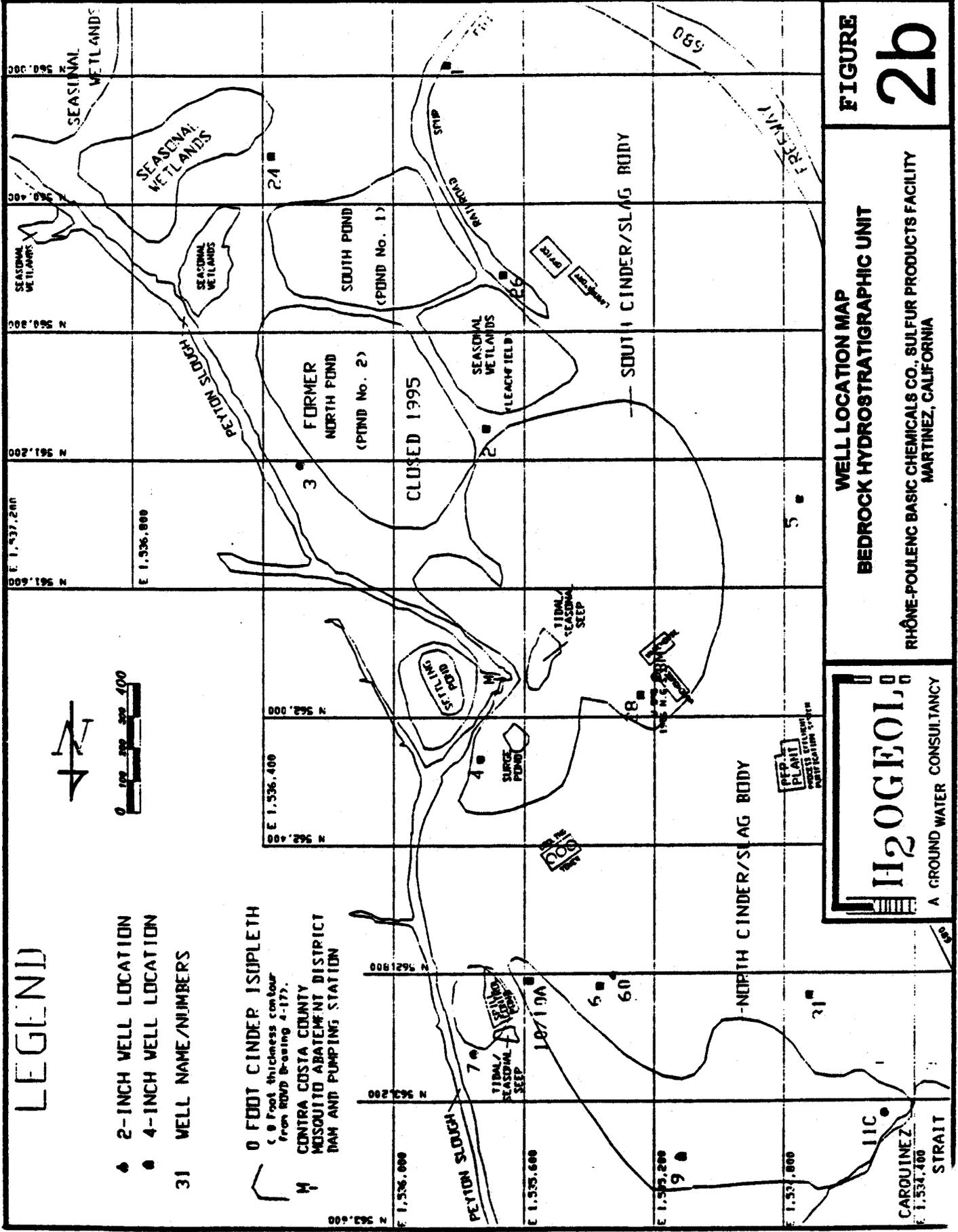


FIGURE
2b

WELL LOCATION MAP
BEDROCK HYDROSTRATIGRAPHIC UNIT

RHÔNE-POULENC BASIC CHEMICALS CO., SULFUR PRODUCTS FACILITY
 MARTINEZ, CALIFORNIA

H2O GEOLOGY
 A GROUND WATER CONSULTANCY

LEGEND

- 2-INCH WELL LOCATION
- 4-INCH WELL LOCATION
- 50 WELL NAME/NUMBERS
- A SURFACE WATER MONITORING LOCATION
- SG-1 STATION NAME/NUMBER

0 FOOT CINDER ISOPLETH
 5 Foot thickness contour
 from RWPB (being 4.17').

M CONTRA COSTA COUNTY
 MOSQUITO ABATEMENT DISTRICT
 DAM AND PUMPING STATION

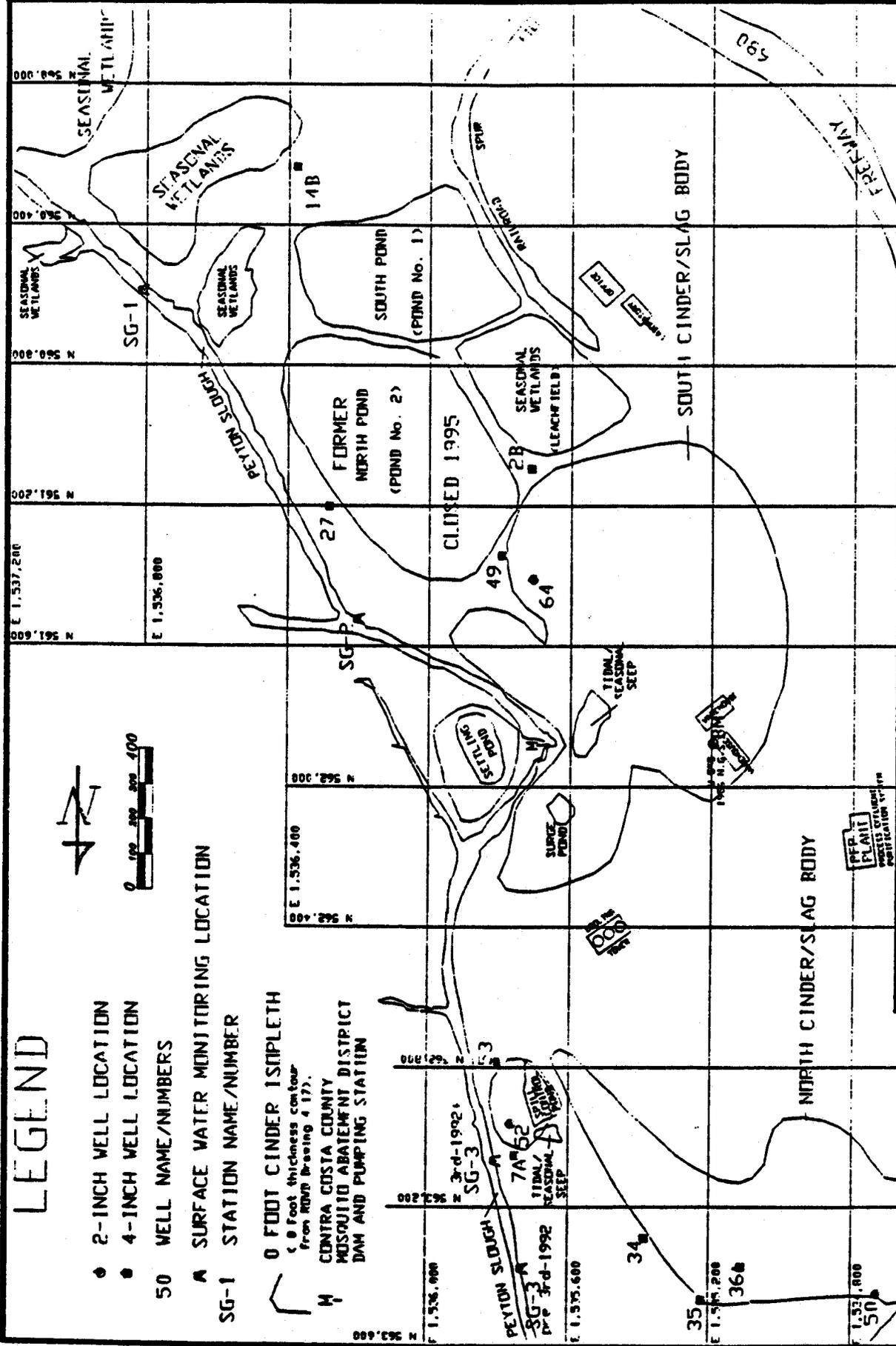


FIGURE 2C

**WELL LOCATION MAP
 INTERMEDIATE HYDROSTRATIGRAPHIC UNIT
 AND LOCATIONS OF SURFACE WATER MONITORING STATIONS
 RHÔNE-POULENC BASIC CHEMICALS CO., SULFUR PRODUCTS FACILITY
 MARTINEZ, CALIFORNIA**

H2O GEOLOGICAL
 A GROUND WATER CONSULTANCY

CARDUINEZ STRAIT

**SWRCB Regulation Cross Reference: Location In
Title 27 Division 2 Subdivision 1 of Solid Waste Requirements
Formerly Located In Title 23 Division 3 Chapter 15**

Chapter 15 // Title 27

Article 1

§2510
(all) // §20080

§2511
(all) // §20090

Article 2

§2520
(all) // §20200

§2521
(not moved to T-27)

§2522
(all) // §20210

Table 2.1 // Table 2.1

§2523
(all) // §20220

§2543
(all) // §20340

§2544
(all) // §20705

§2545
(all) // §20360

§2546
(all) // §20365

§2547
(first part) // §20370
(last part) //
§21750(f)(5)(D)

§2548
(all) // §20375

§2549
(all) // §20377

Article 3

§2524
(all) // §20230

§2530
(all) // §20240

§2531
(not moved to T-27)

§2532
(all) // §20250

§2533
(all) // §20260

Table 3.1 // Table 3.1

Article 4

§2540
(all) // §20310

§2541
(all) // §20320

Table 4.1 // Table 4.1

Figure 4.1 (not moved to
T-27)

Figure 4.2 // Figure 4.1

§2542
(all) // §20330

Article 5

§2550.0
[all but last part of ¶(b)] //
§20380
[last part of ¶(b)] // §22222

§2550.1
(all) // §20385

§2550.2
(all) // §20390

§2550.3
(all) // §20395

§2550.4
(all) // §20400

§2550.5
(all) // §20405

§2550.6
(all) // §20410

§2550.7
(all) // §20415

§2550.8
(all) // §20420

§2550.9
(all) // §20425

§2550.10
(all) // §20430

§2550.11
(all) // §20435

§2550.12
(not moved to T-27)

Article 6

§2560
(all) // §22560

§2561
(all) // §22561

§2562
(all) // §22562

§2563
(all) // §22563

§2564
(all) // §22564

§2565
(all) // §22565

Article 7

§2570
(all) // §22470

§2571
(all) // §22480

Table 7.1 // Table 1.1 (of
Art. 1, Subch. 1,
Chapter 7)

§2572
(all) // §22490

Table 7.2 // Table 1.2 (of
Art. 1, Subch. 1,
Chapter 7)

Table 7.3 // Table 1.3 (of
Art. 1, Subch. 1,
Chapter 7)

§2573
(all) // §22500

§2574
[all but ¶(f & g)] // §22510
¶(f & g) // §22207(b),
§22212(b)

Figure 7.1 // Figure 1.1 (of
Art. 1, Subch. 1,

Chapter 7)

Figure 7.2 // Figure 1.2 (of
Art. 1, Subch. 1,
Chapter 7)

Article 8

§2580
[all except ¶(f)] // §20950
¶(f) // §22207(a),
§22212(a), §22222

§2581
(all) // §21090

§2582
(all) // §21400

§2583
(all) // §211410

§2584
(all) // §21420

Article 9

§2590
(all) // §21710

§2591
(all) // §21720

§2592
(all) // §21730

§2593
(all) // §22190

§2594
(all) // §21740

§2595
(all) // §21750

§2596
(all) // §21760

§2597
(all) // §21769

Article 10

§2600
(all) // §20163

§2610
[most (defs. for haz. waste
left in C-15)] // §20164

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING AND REPORTING PROGRAM

FOR

**RHONE POULENC INC.
MARTINEZ FACILITY**

CONTRA COSTA COUNTY

ORDER NO. 97-121

CONSISTS OF

PART A

AND

PART B

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Board's Resolution No. 73-16.

The principal purposes of a self monitoring and reporting program are: (1) to document compliance with Waste Discharge Requirements and prohibitions established by the Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of standards of performance, and toxicity standards, (4) to assist the discharger in complying with the requirements of Article 5, Chapter 15.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the most recent version of EPA or Standard Methods and in accordance with a sampling and analysis plan approved by the Board.

Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.
2. Receiving waters refers to any surface water which actually or potentially receives surface or groundwater, which pass over, through, or under waste materials or contaminated soils. In this case the groundwater beneath and adjacent to the Facility, the Facility's waste management units, surface runoff from the site, Peyton Slough, and the San Francisco Bay are considered receiving waters.

3. **Standard observations**, at the time of monitoring or in the event of unanticipated discharge, refer to:
- a. **Receiving Waters**
 - 1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area.
 - 2) Discoloration and turbidity: description of color, source, and size of affected area.
 - 3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
 - 4) Evidence of beneficial use: presence of water associated wildlife.
 - 5) Evidence of algae or other unusual growth present or absent.
 - 6) Flow rate.
 - 7) Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.
 - b. **Perimeter of the waste management unit.**
 - 1) Evidence of uncontrolled liquid leaving the waste management unit or facility, estimated size of affected area and flow rate. (Show affected area on map)
 - 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
 - 3) Evidence of erosion and/or daylighted waste.
 - c. **The waste management unit.**
 - 1) Evidence of algal or other unusual growth, precipitation of sludge minerals, quantity, nature and chemical composition.
 - 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
 - 3) Evidence of erosion and/or daylighted waste.

D. SAMPLING, ANALYSIS, AND OBSERVATIONS

The discharger is required to perform sampling, analyses, and observations in the following media:

1. Groundwater per Chapter 15, Section 2550.7(b) and
2. Surface water per Chapter 15, Section 2550.7(c) and per the general requirements specified in Section 2550.7(e) of Article 5, Chapter 15.

E. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and sample station number.
2. Date and time of sampling.
3. Date and time that analyses are started and completed, and name of the personnel performing the analyses.
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used.
5. Calculation of results.
6. Results of analyses, and laboratory reporting limits for each analysis.

F. REPORTS TO BE FILED WITH THE BOARD

1. The **semi-annual self monitoring reports** shall be filed on **May 30th and November 30th**. The semi-annual reports shall be comprised of at least the following:

- a. Letter of Transmittal

A letter transmitting the essential points in each report should accompany each submittal. Such a letter shall include a discussion of **any requirement violations** found during the last report period, and actions taken or planned for correcting the violations. If the discharger

has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal.

Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the Facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

- b. Each semi-annual monitoring report shall include a compliance evaluation summary. The summary shall contain:
- 1) Groundwater flow and direction: A description and graphic presentation of the velocity and direction of groundwater flow under/around the waste management unit, based upon the past and present water level elevations and pertinent visual observations.
 - 2) The method and time of water level measurement, the type of pump used for purging, pump placement in the well; method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature, and conductivity testing, and method of disposing of the purge water.
 - 3) A written discussion of the groundwater analyses indicating any change in the quality of the groundwater.
 - 4) Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations.

- c. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.
- d. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.
- e. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.
 - 1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA Methods or Standard Methods are used, the exact methodology must be submitted for review and approved by the Executive Officer prior to use.
 - 2) In addition to the results of the analyses, laboratory quality assurance/quality control (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical reporting limits; the recovery rates; an explanation for any recovery rate that is less than 80% or greater than 120%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.
- f. An evaluation of the effectiveness of the leachate/groundwater collection, monitoring, control, and removal facilities, which includes a summary of fluid volumes removed, and a discussion of the disposal/treatment methods utilized.
- g. A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.

G. CONTINGENCY REPORTING

- a. A report shall be made by telephone of any **seepage** from any waste disposal area immediately after it is discovered. A written report shall be filed with the Board within five days thereafter. This report shall contain the following information:
 - 1) A map showing the location(s) of discharge;
 - 2) Approximate flow rate;
 - 3) Nature of effects; i.e. all pertinent observations and analyses; and
 - 4) Corrective measures underway or proposed.
- b. A report shall be made in writing to the Board within **seven days** of determining that a **statistically significant difference** occurred between a downgradient sample and a WQPS. Notification shall indicate what WQPS(s) has/have been exceeded. The discharger shall immediately resample at the compliance point where this difference has been found and re-analyze.
- c. A report shall be made by telephone of any requirement violation(s) immediately after it is discovered. A written report shall also be filed within seven days that includes a discussion of the requirement violation(s), and actions taken or planned for correcting the violation(s).
- d. If resampling and analysis confirms the earlier finding of a statistically significant difference between monitoring results and WQPS(s) the discharger must submit to the Board, an amended Report of Waste Discharge as specified in Section 2550.8(k)(5) for establishment of an Evaluation Monitoring Program (EMP) meeting the requirements of Section 2550.9 of Chapter 15.
- e. Within 180 days of determining statistically significant evidence of a release, submit to the Board an engineering feasibility study for a Corrective Action Program (CAP) necessary to meet the requirements of Section 2550.10. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.

H. WELL LOGS

A boring log and a monitoring well construction log shall be submitted for each sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards of the Department of Water Resources. These shall be submitted within 30 days after well installation.

Part B

DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. GROUNDWATER MONITORING

The discharger shall:

1. Collect groundwater samples at the compliance points.
2. Prepare a map showing all compliance points.
3. Prepare a potentiometric surface map for the Facility's Water Table and Bedrock groundwater units and a station elevation value map for the Intermediate unit.

B. GROUNDWATER MONITORING HYDROSTRATIGRAPHIC UNITS

Groundwater samples shall be collected **semiannually (summer/fall and winter/spring)** from the following hydrostratigraphic units and sampled in accordance with Table 1a, 1b and 1c:

1. Water Table Hydrostratigraphic Unit
2. Bedrock Hydrostratigraphic Unit
3. Intermediate Hydrostratigraphic Unit

Groundwater analysis shall include the following field measurements: pH, temperature, specific conductance, water level, volume purged, and number of casing volumes purged.

C. SURFACE WATER MONITORING STATIONS

Surface water samples shall be collected **quarterly (winter, spring, summer and fall)** from the following Peyton Slough monitoring stations: Station SG-1, Station SG-2, and Station SG-3. The stations shall be sampled in accordance with Table 1d.

Surface water analysis shall include the following field measurements: pH, temperature, specific conductance, water level, and volume purged.

D. FACILITIES MONITORING - Observe quarterly, report semiannually

The discharger shall inspect all facilities to ensure proper and safe operation. The facilities to be monitored shall include, but not be limited to:

1. Waste containment systems;
2. Waste treatment systems;
3. Surface water retention basins;

4. Leak detection systems (where applicable); and,
5. Leachate/groundwater management facilities and secondary containment.

E. MONITORING REPORT DUE DATES

Groundwater and Surface Water

- a. Summer/Fall: November 30th.
- b. Winter/Spring: May 30th.
- c. Annual: November 30th -The annual report can be combined with the discharger's summer/fall semiannual report.

I, Loretta K. Barsamian Executive Officer, hereby certify that the foregoing Self-Monitoring and Reporting Program:

1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 97-121
2. Is effective on the date shown below.
3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.

Date Ordered: October 15, 1997


Loretta K. Barsamian
Executive Officer

Attachment: Table 1a, 1b, 1c and 1d: Self Monitoring and Reporting Program List of Analytical Parameters and Sample Points

TABLE 1a. Water Table Hydrostratigraphic Unit: Revised Groundwater Monitoring Schedule

Well	Water Levels	1st Semiannual Event ¹	2nd Semiannual Event ²
South Cinder Body			
MW-2A	Semiannual	X	X
MW-3A	Semiannual	X	X
MW-4A	Semiannual	X	X
MW-8A	Semiannual	X	X
MW-14A	Semiannual	---	---
MW-19	Semiannual	X	X
MW-20	Semiannual	X	X
MW-21	Semiannual	X	X
MW-22	Semiannual	X	X
MW-23A	Semiannual	X	X
MW-25	Semiannual	X	X
MW-29	Semiannual	X	X
MW-30	Semiannual	X	X
MW-38	Semiannual	---	---
MW-39	Semiannual	---	---
MW-40	Semiannual	---	---
MW-41	Semiannual	---	---
MW-54	Semiannual	---	---
MW-55	Semiannual	---	---
MW-56	Semiannual	X	X
MW-57	Semiannual	---	---
MW-58	Semiannual	X	X
MW-59	Semiannual	---	---
MW-63	Semiannual	---	---
MW-65	Semiannual	---	---
EW-1	Semiannual	X ³	X ³
SA, SB, SC, SD, SE, S-25, S-29	Semiannual	---	---

TABLE 1a (con't). Water Table Hydrostratigraphic Unit: Revised Groundwater Monitoring Schedule

Well	Water Levels	1st Semiannual Event ¹	2nd Semiannual Event ²
North Cinder Body			
MW-15	Semiannual	X	X
MW-16	Semiannual	X	X
MW-18	Semiannual	X	X
MW-32	Semiannual	---	---
MW-33	Semiannual	X	X
MW-37	Semiannual	---	---
MW-42	Semiannual	---	---
MW-43	Semiannual	---	---
MW-44	Semiannual	---	---
MW-45	Semiannual	---	---
MW-46	Semiannual	X	X
MW-47	Semiannual	---	---
MW-48	Semiannual	X	X
MW-51	Semiannual	X	X
MW-62	Semiannual	X	X
EW-2	Semiannual	X	X
NA, NB, NC, ND, NE, NF, NG, NH	Semiannual	---	---
X-1, X-2	Semiannual	---	---
S-24, S-28	Semiannual	---	---

X = Indicates that a groundwater sample is collected for analytical laboratory testing.

1. Samples tested for: Iron, Nickel, Zinc, Cadmium

2. Samples tested for: Iron, Nickel, Zinc, Cadmium, Copper, Lead, Arsenic, Barium

3. Samples to be tested for Mercury in addition to the regularly scheduled analytes (Notes 1 & 2).

--- = Wells monitored semiannually for water levels, no groundwater samples collected.

TABLE 1b. Bedrock Hydrostratigraphic Unit: Revised Groundwater Monitoring Schedule

Well	Water Levels	1st Semiannual Event ¹	2nd Semiannual Event ²
South Cinder Body			
MW-1	Semiannual	---	---
MW-2	Semiannual	X	X
MW-3	Semiannual	X	X
MW-4	Semiannual	X	X
MW-5	Semiannual	X	X
MW-24	Semiannual	X	X
MW-26	Semiannual	X	X
MW-28	Semiannual	X	X
North Cinder Body			
MW-6	Semiannual	---	---
MW-7	Semiannual	X	X
MW-9	Semiannual	---	X
MW-10	Semiannual	---	---
MW-10A	Semiannual	---	---
MW-11C	Semiannual	X	X
MW-31	Semiannual	---	---
MW-60	Semiannual	---	---

X = Indicates that a groundwater sample is collected for analytical laboratory testing.

1. Samples tested for: Iron, Nickel, Zinc, Cadmium

2. Samples tested for: Iron, Nickel, Zinc, Cadmium, Copper, Lead, Arsenic, Barium

--- = Wells monitored semiannually for water levels, no groundwater samples collected.

TABLE 1c. Intermediate Hydrostratigraphic Unit: Revised Groundwater Monitoring Schedule

Well	Water Levels	1st Semiannual Event ¹	2nd Semiannual Event ²
South Cinder Body			
MW-2B	Semiannual	X	X
MW-14B	Semiannual	---	---
MW-27	Semiannual	X	X
MW-49	Semiannual	X	X
MW-64	Semiannual	X	X
North Cinder Body			
MW-7A	Semiannual	---	---
MW-34	Semiannual	---	---
MW-35	Semiannual	---	---
MW-36	Semiannual	---	X
MW-50	Semiannual	X	X
MW-52	Semiannual	X	X
MW-53	Semiannual	X	X

X = Indicates that a groundwater sample is collected for analytical laboratory testing.

1. Samples tested for: Iron, Nickel, Zinc, Cadmium

2. Samples tested for: Iron, Nickel, Zinc, Cadmium, Copper, Lead, Arsenic, Barium

--- = Wells monitored semiannually for water levels, no groundwater samples collected.

Table 1d. Peyton Slough Surface Water Monitoring Stations Monitoring Schedule

Station	Monitoring Frequency	1st Quarter ¹	2nd Quarter ¹	3rd Quarter ¹	4th Quarter ¹
SG-1	Q	X	X	X	X
SG-2	Q	X	X	X	X
SG-3	Q	X	X	X	X

Q = Quarterly

X = Indicates that a surface water sample is collected for analytical laboratory testing

1. Samples tested for: iron, nickel, zinc, cadmium, copper, lead, arsenic, and barium.